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NOTES ON TEXAS PLANTS[1]

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What appears to be an undescribed species of Petalostemum was discovered in the Chisos Mountains by the writer, September 26, 1938. A colony of fifty or more of these plants, all in bloom and some beginning to fruit, were growing in moist gravel at the edge of running water along Boot Creek, on the summit of these mountains, and at less than a mile from the South Rim.

Petalostemum **oreophilum**, sp. nov., annuum, glabrum; caule 15–40 cm. alto, 1 mm. diametro, erecto tereti plerumque simplice vel ramis paucis erectis vel adscendentibus; foliis 2.5–4 cm. longis adscendentibus, foliolis 13–21, saepius 19, oblongo-cuneatis, ad 5 cm. longis 1.5 mm. latis apice emarginatis glabris, pagina superiore pallide viridibus inferiore caerulescenti-viridibus minuteque punctatis; spicis cylindricis densis villosissimis ad 6 cm. longis et 1 cm. latis; bracteis ovatis 4 mm. longis acuminatis villosis, marginibus scariosis; calyce dense villoso glanduloso 3 mm. longo, lobis anguste lanceolatis tubumque aequantibus; corolla 5 mm. longa purpurascente, vexilli lamina oblongo-ovata 2 mm. longa, ungui 3 mm. longo; petalorum alterum laminis ellipticis minus quam 2 mm. longis; legumine oblique obovoideo sublunato 2.5 mm. longo 2 mm. lato superne villoso; seminibus sublunatis 2 mm. latis compressis, latere unico concavis opacis brunnescentibus.

Petalostemum **oreophilum** n. sp. Plant a glabrous annual with slender taproot; stem 15–40 cm. tall, 1 mm. broad; erect, terete, usually simple or with only a few erect or ascending branches; stipules subulate, fugacious; leaves 2.5–4 cm. long, ascending; leaflets 13–21, frequently 19, oblong-cuneate, up to 5 mm. long and 1.5 mm. broad, emarginate at the apex, glabrous, light-green above, bluish-green and

[1] Printed at the expense of the author to insure immediate publication.

minutely dotted beneath; spikes cylindric, dense, very villous, up to 6 cm. long and 1 cm. broad; bracts ovate, 4 mm. long, acuminate, villous, the margins scarious; calyx densely villous, glandular, 3 mm. long, the lobes narrowly lanceolate and as long as the tube; corolla 5 mm. long, purplish; blade of the banner oblong-obovate, 2 mm. long, the claw 3 mm. long; blades of the other petals elliptic, less than 2 mm. long; pod obliquely obovoid, somewhat lunate, 2.5 mm. long, 2 mm. broad, villous above; seed somewhat lunate, 2 mm. broad, flattened, one surface concave, dull and brownish.

In certain respects this plant is closely related to *P. emarginatum*, which, however, is several-branched and with the branches decumbent. Also *P. emarginatum* is less leafy and has fewer leaflets to the leaf, and in appearance is quite unlike our plant of the mountains. The type specimen is deposited in the Gray Herbarium.

While on a field trip with Mr. H. B. Parks to the Big Bend country of Texas in April, 1936, alongside a ranch road and a shallow draw leading down to Alamo de Caesario Creek, just north of Agua Fria Mountain, two white-flowered plants of a species of Nama were seen and were collected. To us these plants were different from *Nama Havardii*. Recently, April 3, 1939, on a trip to the same locality with Mr. O. A. Beath of the Wyoming Experiment Station, at a point five miles northeast of the original locality, in a gravelly wash above and to the west side of the gullied bed of Terlingua Creek and in a space possibly 50 feet wide and 150 feet long a hundred or more of these white-flowered plants were observed, growing in almost a pure stand. Material of both collections, 1936 and 1939, has been seen by Dr. C. Leo Hitchcock. I concur with his opinion that our plant more properly should be distinguished as a variety of *Nama Havardii* than as a separate species.

NAMA HAVARDII A. Gray, var. **album**, var. nov., quam varietas typica major patentior succulentior; corolla alba.

NAMA HAVARDII A. Gray, var. **album**, n. var. Differs from the species in having a pure white corolla, and its tendency to make a large, more succulent and more spreading growth.

Although *Nama Havardii* was described as being perennial, in our experience it is of annual duration, growing from a stout taproot. As the white-flowered form is larger in several respects than is the species a detailed description seems desirable.

Plant a succulent, cinereous-villous annual, up to 25 cm. tall and 30 cm. broad, from a stout taproot; stem branched from the base and branched above, the branches stout, ascending-spreading, terete, 1–3

mm. in diameter, densely cinereous-villous; leaves fleshy, densely villous on both surfaces, oblong-elliptic to obovate, up to 4 cm. long and 13 mm. broad, narrowed to slender petioles; flowers borne in lax cymes on slender pedicels, which are up to 5 mm. long; calyx-lobes linear-spatulate, in anthesis 6–7 mm. long, elongating in fruit to 11–12 mm. long, densely villous; corolla tubular-campanulate, pure white, up to 13 mm. long, mostly about 12 mm. long; stamens unequally inserted towards the base of the corolla, the free portion terete, 2–3 mm. long, the adnate portion thickened and much expanded, 3.5–5 mm. long; styles free, mostly 3.5–4 mm. long; capsules about 5 mm. long; seeds brown, minutely pitted.

The variety apparently is of local occurrence only, growing in the gravelly beds of Alamo de Caesario and Terlingua Creeks and their tributaries at and above the junction of these two water courses, but possibly only sparsely on down Terlingua Creek below this junction. At fifteen miles lower down Terlingua Creek a tributary had an abundance of *Nama Havardii* in excellent development, but there were none of the plants having pure white flowers. The type specimen, No. 18602, was collected April 13, 1936, at 18 miles north and slightly west of Terlingua on an airline, in Brewster County, Texas. It is deposited in the Gray Herbarium.

The first collection in Texas of *Nama torynophyllum* Greenm. was made by Mr. Hugh C. Cutler, March 4, 1937, at two miles east of Castolon, in Brewster County. Two subsequent collections have been made by the writer. One of these was taken September 28, 1938, at 1½ miles north of Castolon, or in the same general vicinity as the first collection, while the other was taken April 5, 1939, in the moist gravelly bed of Maravillas Creek, 45 miles northeast on an airline from the locality of the previous collections. This mat-like plant with its small, deeply cup-shaped leaves is something of a curiosity.

Some of the plants of southwestern Texas seemingly were described from growth not of the best development. *Lupinus Havardi* S. Wats. may be taken as an example. As described in "Botany of West Texas," by John M. Coulter, the stems are 30–45 cm. high, which certainly would be rather a modest plant. Mr. O. A. Beath and myself on April 3, 1939, noted a plant of this species, growing in the gravelly bed of Terlingua Creek at 13 miles northeast of Terlingua, that had a spread of four feet and was about two feet high and bore something like fifteen racemes of deep purple flowers, the racemes being nearly two feet in length. This truly is a magnificent blue-bonnet, as the lupines are called in Texas; and a lupine is the State

flower of Texas. However, not many Texans ever have seen *Lupinus Havardi*. Is not this species the most magnificent lupine of the United States? Mr. Beath photographed this particular plant.

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LAST SURVIVORS IN THE FLORA OF TIDEWATER VIRGINIA

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(*Continued from p. 559*)

VERONICA ANAGALLIS-AQUATICA, forma ANAGALLIFORMIS (Boreau) G. Beck (*V. glandifera* Pennell). Spring-heads, ditches and pools, various stations in JAMES CITY, SURRY and NANSEMOND COUNTIES (many nos.). PLATES 580 and 581.

I have studied for many days the series of circumboreal material of *Veronica Anagallis-aquatica*, vainly striving to find the two endemic American species, *V. glandifera* Pennell in Torreya, xix. 170 (1919) and *V. connata* Raf. Med. Fl. ii. 110 (1830) or *V. catenata* Pennell in RHODORA, xxiii. 37 (1921), maintained by Pennell. It seems to me that many specimens of American *V. glandifera* (PL. 580, FIGS. 1, 3 and 5; PL. 581, FIGS. 1, 4 and 6) are quite inseparable from the plants of European *V. Anagallis-aquatica* (or *V. Anagallis* of most European authors) with a few glandular hairs in the inflorescence (PL. 580, FIGS. 2, 4 and 6; PL. 581, FIGS. 2 and 5); and certainly, if the few glands are discounted, it is to me quite impossible to separate material from the type-region (vicinity of Suffolk, Virginia, PL. 581, FIG. 6) from a large series of typical European and Asiatic *V. Anagallis-aquatica*. The differences between *V. Anagallis-aquatica* and *V. glandifera* given by Pennell are as follows:

"E. Stems distally, rachis, and pedicels glabrous or nearly so; sepals acute to slightly acuminate; style 1.5–3 mm. long; leaf-blades oblong-ovate, mostly widest about the middle, slightly serrate to nearly entire.....17. *V. anagallis-aquatica.*

EE. Stems distally, rachis, and pedicels pubescent with gland-tipped hairs; sepals strongly acuminate; style 1–1.5 mm. long; leaf-blades lanceolate or broadly lanceolate, widest near the base, usually more strongly serrate. 18. *V. glandifera.*"

In Europe, however, *Veronica Anagallis-aquatica* (or *V. Anagallis*)